

## **TROPICAL RAINFALL MEASURING MISSION**

**July 12, 1999 - July 18, 1999**

**DOY 193 - 199**

**Day of Mission 592 - 598**

### **TRMM MISSION OPERATIONS**

- TRMM is flying in the +X Forward direction as of 99-196, at 10:18:07z.
- The next Yaw maneuver is scheduled for August 15th (99-227).
- Delta-V maneuver #111 is scheduled for July 21st (99-202) using the LBS thrusters.
- The Beta angle range for DOY 200 to 206 is 12.5° to 41.5°.

### **TRMM SUBSYSTEM OPERATIONS**

#### **Attitude Control System**

Delta-V maneuver #110 was successfully conducted on 99-195 at 15:32:58z and 16:18:45z, for durations of 48.0 and 28.875 seconds respectively, using the ISP thrusters. The off-modulation of the -Pitch thruster (#6) for burn 1 and 2 was 37.8% and 36.0% respectively (62.2% and 64.0% on time). The remaining fuel is 711.951 kg and the final apogee and perigee height is 354.92 km x 347.43 km.

A 180° Yaw Maneuver from -X forward to +X forward was conducted on 99-196, at 10:18:07z.

Uplinked ACS System Table #85 on 99-193, which widened the limits to 2400 km to allow proper uplink of TDRS EPV. The original table was copied from EEPROM after the propagation of the EPV.

The final Test Review of the TRMM Solar Array FDC Limit change was conducted on 99-197 by Flight Software Maintenance.

#### **Flight Data System (FDS)/Command & Data Handling (C&DH)**

The frequency standard continues to drift in the negative direction. The frequency remains x'765', with a current drift rate of -2.53  $\mu$ s/hr. The UTCF was adjusted by -890  $\mu$ s on 99-195 23:00:49z and is now 31535996.862426 sec with a current drift value of -235  $\mu$ s.

Q-Channel restarts occurred on 99-193 at 01:00:00z.

A software bus send error occurred on 99-193 at 06:00:11z due to VIRS. Invalid Stream Id from XS messages were received on 99-199 at 05:37:00z due o VIRS event #20.

The PM task is regularly losing packets for TMI and CERES (when ON). For CERES, the packets are registered as Incomplete and then Missing. For TMI, the packets are registered as Discarded and then Missing (Anomaly #75). This behavior has not been seen in PR or VIRS (XS). Investigations are currently in progress to determine operational impact.

## Reaction Control Subsystem (RCS)

The RCS subsystem performed nominally during this period. See the ACS section for specific Delta-V information.

## Power Subsystem

The Power subsystem is operating nominally.

## Electrical Subsystem

The Electrical subsystem operated nominally during this period.

## Thermal Subsystem

The Thermal subsystem operated nominally during this period.

## Deployables Subsystem

The Deployables subsystem performed nominally during this period.

## RF/Communications Subsystem

The RF/Communications subsystem performed nominally during this period.

## SPACECRAFT INSTRUMENTS

### CERES

CERES personnel are developing a plan for operating the instrument with the +15 V DAA anomaly. Work continues in creating and testing the new Tables and RTSs required.

The following are the activities performed with CERES during the Australian testing in the week of 99-193 through 99-199:

TIME	ACTIVITY
194/03:00:36z	Power ON
194/03:05:15z	Crosstrack
194/04:52:12z	Power OFF
195/02:22:54z	Power ON
195/02:27:54z	Crosstrack
195/05:42:33z	Power OFF
196/02:43:05z	Power ON
196/02:48:32z	Crosstrack
196/04:29:13z	Power OFF
197/01:33:41z	Power ON

197/02:12:00z	Crosstrack
197/06:05:20z	Power OFF
197/22:54:11z	Power ON
197/02:01:30z	ABASYNC Gimbal Data (10 mins.)
197/23:01:23z	Crosstrack
198/02:13:00z	Slow Mode Assessment (10 mins)
198/06:27:08z	Power OFF

The next Power ON will be at the end of August..

## LIS

LIS performed nominally during this time period.

A routine command request from MSFC to reset the instrument and configure it back to normal was performed on 99-195 at 12:22:00z.

## PR

PR performed nominally during this time period. The list of Internal Calibration times in which PR was not radiating is listed below:

1999:193:17:07:01-17:09:11z  
1999:194:09:24:58-09:29:15z  
1999:194:15:55:21-15:57:35z  
1999:195:16:17:40-16:19:47z  
1999:196:08:36:16-08:37:38z  
1999:196:15:06:27-15:08:40z  
1999:197:07:26:46-07:28:59z  
1999:197:15:29:19-15:31:26z  
1999:198:14:17:53-14:20:04z  
1999:199:06:36:03-06:40:33z  
1999:199:14:40:30-14:42:36z

## TMI

TMI performed nominally during this time period.

## VIRS

VIRS performed nominally during this time period.

VIRS Solar Calibration request was performed at 198/07:03:06z and 198/10:05:58z.

The VIRS Cold Stage temperature peaked at 110° K on 99-199, following the most recent beta zero crossing.

## GROUND SYSTEM

Y2K testing has been completed on string 3. String 3 operational readiness testing will be performed after completion of rollover testing. String 2 remains the prime Mission Planning string for normal spacecraft operations.

TRMM participated in NCC Y2K testing on 99-194. The rollover was missed, however, all testing done after the rollover went well. Overall, the FOT was satisfied with the test because NCC will not allow an event to cross the year change.

During the 99-198/20:53:00z event, the DC card on Front End Processor #1 disconnected with 6 minutes remaining in the event. Failed over to string 2 for commanding - no data was lost (Event #109).

### **Event Reports**

#109 -Front End Processor #1 DC Card Disconnect.

### **Generic Late Acquisition Reports (for TTRs 19639)**

No new generic late acquisition reports were generated during the week.

### **New Anomaly**

#75 PM Discarding Packets on Regular Basis

### **Recurring Open Anomalies**

There were no recurring open anomalies during this week.

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